

4 | Description of the Database

The data analyzed in this document were contributed on a voluntary basis by various state and local governmental agencies, consulting firms, individual transportation professionals, universities and colleges, developers, associations, local sections, districts, and student chapters of ITE. In many cases, the data were originally contained in published reports or unpublished analyses conducted by such groups. The sources of these reports or analyses are listed in Appendix A. The source numbers for studies contained in each land use are listed on the land use description pages in Volume 2.

ITE Headquarters conducted no original field surveys. The amount of data submitted for an individual site varied from as little as one peak-hour volume to seven days of directional hourly volumes. All data have been combined to maximize the size of the database for each land use and each time period. Data received were initially examined by ITE staff for validity and reasonableness before being entered into the comprehensive database.

Data Collection

Some of the data submitted were collected using automatic counters configured to count vehicular traffic entering and exiting a site. The sites selected for counting did not include through traffic, and counts were taken on driveways of sufficient length to avoid the double counting of turning vehicles. In some cases, counts were non-directional and therefore did not distinguish between entering and exiting vehicles. Manual counts often supplemented the automatic counts to obtain vehicle occupancy and classification; to check the reliability of the automatic counters; and to obtain directional counts during peak periods when a non-directional automatic count was being conducted. In other cases, only manual counts of vehicles or persons were conducted during peak periods. For some sites, the count data were supplemented by intercept surveys to determine travel modes of persons that enter or exit the site on foot.

Additional information regarding site characteristics was obtained through Internet searches, personal interviews, actual measurements, or telephone conversations.

Data Analysis and Storage

The statistical analyses conducted for the *Trip Generation Manual* were derived from a customized software program and database developed for ITE. Each data record was referenced in the database by a source number; the month and year of the vehicle or person count; the state or province; the setting/location; and a three-digit land use code. Data for 176 land uses are classified within 10 major land use categories. Additional land uses are continuously added to the database as data become available.

Data Age

The database originally compiled to produce this manual contained data extending back to the early 1960s. However, based on the significant amount of new data received for the 10th Edition update and a detailed review of the age of data in the existing database, ITE decided to eliminate all data collected prior to 1980. As future editions are produced, the age of data will be evaluated and additional data will be considered for removal. The deletion of pre-1980 data resulted in the removal of several non-critical land uses, independent variables, and time periods from the existing database.

With the inclusion of the new web app—ITETripGen—users of the *Trip Generation Manual* now have the ability to create customized data plots based on the age of data, site geography, setting, and a range of values for the independent variable. Electronic data sorts provide a filtered subset of the entire dataset for individual review and analysis. This new ability to filter the data may provide useful insights into the data. However, the analyst should exercise caution when interpreting a data subset. The data subset does not necessarily constitute a balance of potential land use characteristics across the database. As the database is filtered and the database size diminishes, the less likely the possibility that a reasonable cross-section is achieved.

Variations in the Statistics

Variations in trip generation characteristics for specific land uses are reflected in the range of rates, standard deviation, and coefficient of determination (R^2) value. (See Chapter 5, “Description of Data Plots and Reported Statistics,” for additional details on these topics.) These variations may be due to a small sample size, individual marketing of the site, economic conditions of the business market, geographic location of the sites studied, or unique characteristics of the specific site. Accordingly, judgment must be exercised in the use of the statistics in this manual.

Other sources of variation include different lengths of traffic count duration and the time of year the traffic volumes were counted; that is, daily and seasonal variations may exist for some land uses. Further, variations may also exist based on geographic location. The ITETripGen web app allows users to examine filtered sets of data based on geographic location by regions within the U.S. as well as filtering both U.S. and Canadian sites.

Limitations of the Data Plots

The plots presented in the *Trip Generation Manual* cover only the range of independent variables for which data are available. Caution should be used if extrapolating the data beyond the ranges provided because no information has been supplied to document trip generation characteristics beyond the given ranges.

It should also be noted that in some cases, because of the limited sample size and variation in the data received, the projected trip generation estimate for the peak hour of the adjacent street traffic exceeds the trip generation estimate for the peak hour of the generator. By definition, this is impossible. In these isolated cases, knowledge of the project site and engineering judgment should be used to select the appropriate trip generation approximation.